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| EXAMINER | |
|---|---|
| MARIAM, DANIEL G | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| | | |
|---|---|---|
| **Office Action Summary** | **Application No.**<br>10/684,047 | **Applicant(s)**<br>MACY ET AL. |
| | **Examiner**<br>DANIEL G. MARIAM | **Art Unit**<br>2624 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date *1/28/04*.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Election/Restrictions*

1. The restriction requirement to claims 1-16 and 17-19, as set forth in the Office action mailed on June 28, 2007, has been reconsidered in view of applicants' argument filed July 23, 2207, and the arguments are found to be persuasive. Thus, the restriction requirement is hereby withdrawn.

### *Claim Objections*

2. Claims 6 and 11 are objected to because of the following informalities: claim 6 recites the limitation "form" in line 2 and should be replaced by the limitation "from"; and claim 11 recites the limitation "know" in line 2, and should be replaced with the limitation "known". Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 7, 9, and 13-14 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. A "Microchip PIC18F252 processor with a 40.0 MHz oscillator" is utilized as the pixel processor (See paragraph 0071 of the specification) is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). It is essential to

utilize the specific Microchip PIC18F252 processor rather than the generic processor recited in the claims, for each 1" wide linear array of pixels to practice the instant claimed invention.

Since claims 9 and 13-14 depend on claim 7, they are also rejected under 35 U.S.C. 112 first paragraph, for the same reason set forth above for claim 9.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 7, 9 and 13-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 recites the limitation "application program that receives scan data and pixel counts" in line 12. It is unclear where the scan data and pixel counts that are received by the application program come from within the context of the claimed invention? Does this mean the system is automatically trained to know the source of the scan data and pixel counts. Please clarify.

7. Claims 9, and 13-14 recites the limitation "the method" in line 1. There is insufficient antecedent basis for this limitation in the claim.

### *Examiner's Note*

8. Examiner has cited particular columns and line numbers or figures in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially

teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

## *Claim Rejections - 35 USC § 102*

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Wingfield, et al. (4,648,119).

With regard to claim 18, a computer system having a processor, a memory and an operating environment, the computer system operable to execute instructions for analyzing a scanned object image having a plurality of pixels (See for example, Figs. 1 and 2), comprising: providing a value for each of said plurality of pixels (See for example, col. 4, lines 1-8; and Figs. 3-6 and the associated text); and comparing each of said pixel values against a threshold value to produce a grayscale image of the scanned object, wherein said value represents the degree of luminance, i.e., light intensity, of said pixel (See for example, col. 4, lines 8-20; and col. 5, lines 11-22).

Claim 17 is rejected the same as claim 18 except claim 17 is a method claim. Thus, argument similar to that presented above for claim 18 is applicable to claim 17.

Claim 19 is rejected the same as claim 18. Thus, argument similar to that presented above for claim 18 is applicable to claim 19. As to a computer readable medium having computer executable instructions, applicants' attention is invited to item 30, in Figure 1 or 2, and the associated text.

### *Claim Rejections - 35 USC § 103*

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 1-4, 8 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coughlin, et al. (6,592,005).

With regard to claim 1, Coughlin, et al. (hereinafter "Coughlin") discloses an optical system for identifying one or more objects, i.e., pills, tablets or capsules (See for example, Fig. 3), comprising: a light source array (See for example, item 40, in Fig. 3); an array of photo detectors (See for example, item 42, in Fig. 3); means for grouping said light source array and said array of photo detectors into at least (two zones) (Coughlin shows a detection zone (44) that is defined as a substantially horizontal planar surface located between and defined by the light emitting and receiving arrays 40 and 42 (See for example, item 44, in Fig. 3)); means for rapidly strobing said light source array and scanning said photo detectors (which correspond to dispensing machine 12) within each of said zones to capture a plurality of data values, i.e., lower light level signals or counts, as one or more target objects, i.e., pill/s, tablet/s or capsule/s, pass through said zones, means, i.e., amplifier, for producing a capture image of said target objects utilizing said data values, and means, i.e., control board or computing device, for utilizing said capture image to identify said objects (See for example, col. 3, line 54 – col. 4, line 49; and col.

6, lines 1-44). Coughlin does not expressly call for grouping the light source array and the array of photo detectors into at least two zones. Instead, Coughlin a detection zone disposed between the light source array and the array of photo detectors, i.e., receiving arrays, so as to capture a plurality of low level light values as the pills pass through the detection zone. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Coughlin for the same purpose, because a mere change in number of zones in this case is obvious per case law, and the change, although probably not necessary, would be well within the level of one of ordinary artisan.

With regard to claim 2, a system as recited in claim 1 further comprising means for accumulating counts of identified objects (See for example, col. 6, lines 26-28).

With regard to claim 3, a system as recited in claim 1 further comprising means to determine opacity of said one or more target objects (which broadly reads on col. 6, lines 13-17).

With regard to claim 4, a system as recited in claim 1, wherein identifying includes comparing said objects with known objects, utilizing size and pixel luminance (See for example, col. 5, lines 10-15 and lines 58-66).

With regard to claim 8, a method in a computing system for counting a falling object, i.e., pill, capsule or tablet, passing between a light source and a plurality of photo detectors (See for example, Fig. 3), comprising: grouping said plurality of photo detectors into one or more counting zones (arguments presented above for claim 1 are not repeated herein, but are entirely incorporated herein by reference) repeatedly scanning said counting zones for a capture image of said falling object, i.e., the computing device accumulates multiple pill sense signals as a given pill and subsequent pills pass through the detection zone to generate a total pill count; identifying said capture image (the pill image or the presence of a pill image is identified in response to a lower light level as each pill is passed through the detection zone; and including the falling object in a count, i.e., total pill count, if the capture image is identified (See for example, col. 6, lines 1-34; and Fig. 3 and the associated text).

Claim 15 is rejected the same as claim 8. Thus, argument analogous to that presented above for claim 8 is applicable to claim 15. As to a computer readable medium having computer executable instructions for counting a falling object passing between a light source and a plurality of photo detectors, applicants' attention is invited to item 24, in Fig. 1, for example.

Claim 16 is rejected the same as claim 8 except claim 16 is an apparatus claim. Thus, argument analogous to that presented above for claim 8 is applicable to claim 16.

13. Claims 5 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coughlin as applied to claims 1-4, 8 and 15-16 above, and further in view of Hamilton (6,738,723).

With regard to claim 5, Coughlin discloses all of the claimed subject matter as already set forth above in paragraph 12, and is incorporated herein by reference. Coughlin does not expressly call for wherein the capture image is displayed to an operator for identification. However. Hamilton (See for example, item 108, in Fig. 3 or col. 5, lines 31-35) teaches this feature. Coughlin and Hamilton are combinable because they are from the same field of endeavor, i.e., pill counting (See the abstract, for example). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of

Coughlin with Hamilton. The motivation for doing so is to send the captured pill image to a display device so that identification or various other processes can be performed by an operator/user (See for example, items 108,110 and 112, in Fig. 3). Therefore, it would have been obvious to combine Hamilton with Coughlin to obtain the invention as specified in claim 5.

With regard to claim 10, comparing said capture image with a known image by comparing said count of valid pixels and said count of scan lines in said capture image with a number of valid pixels and a number of scan lines for a known image, i.e., desired quantity, preexisting color of pill/s, stored initial light level/s, or (See for example, items 108,110,112 in Fig. 3 of Hamilton; and col. col. 5, lines 10-15 of Coughlin).

With regard to claim 11, A method as recited in claim 10, wherein said number of valid pixels and said number of scan lines for a know image are obtained during execution in a diagnostic mode (See for example, col. 5, lines 10-12 of Coughlin; and col. 7, lines 5-36 of Hamilton).

With regard to claim 12, a method as recited in claim 10 further comprising maintaining simultaneous counts for multiple recepticles of said falling objects (See for example, col. 6, lines 23-29 of Coughlin).

14. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coughlin as applied to claims 1-4, 8 and 15-16 above, and further in view of Wingfield, et al. (4,648,119).

With regard to claim 6, Coughlin discloses all of the claimed subject matter as already set forth above in paragraph 12, and is incorporated herein by reference. Coughlin does not expressly call for an analog signal value form said array of photo detectors, a gray scale converted from said analog signal value, and one or more data bits corresponding to said gray scale. However, Wingfield, et al. (See for example, col. 5, lines 1-22; and col. 6, lines 8-33) teaches this feature. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the teaching as taught by Wingfield, et al. into the system of Coughlin, if for no other reason than to generate gray scale value/bits from analog signals of the light intensity derived from the detectors.

## ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Numbers: 4396828, 5255331, 5363968, 5638417, and 6610973.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL G. MARIAM whose telephone number is 571-272-7394. The examiner can normally be reached on M-F (7:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW BELLA can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DANIEL G MARIAM
Primary Examiner
Art Unit 2624

August 23, 2007